Appl. No. : **10/646,333**
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AMENDMENTS TO THE CLAIMS

1-173. (Canceled)

174. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion of the body such that when a foreign body capsule forms around the sensor, a contractile force is exerted by the foreign body capsule toward the sensing region, wherein the body comprises a first surface on which the sensing region is located and a second surface, and wherein said first surface comprises an anchoring material thereon for supporting tissue ingrowth and wherein said second surface is located opposite said first surface, and wherein said second surface is substantially smooth and comprises a biocompatible material that is non-adhesive to tissues.

175. (New) The sensor of claim 174, wherein said second surface is curved.

176. (New) The sensor of claim 174, wherein the sensor is a subcutaneous sensor.

177. (New) The sensor of claim 174, wherein the sensor is configured for implantation in a soft tissue of a body.

178. (New) The sensor of claim 174, wherein the sensor is a glucose sensor.

179. (New) The sensor of claim 174, comprising a mechanical anchoring mechanism formed on the body.

180. (New) The sensor of claim 179, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

181. (New) The sensor of claim 174, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

182. (New) The sensor of claim 174, wherein said first surface, when viewed from a direction perpendicular to a center of said first surface, has a substantially rectangular profile with rounded corners.

183. (New) The sensor of claim 174, wherein the anchoring material is selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

184. (New) The sensor of claim 174, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

185. (New) The sensor of claim 184, wherein the body comprises a plastic.

186. (New) The sensor of claim 185, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

187. (New) The sensor of claim 186, wherein the thermoset plastic is an epoxy.

188. (New) The sensor of claim 174, wherein the sensing region is situated approximately at an apex of a surface of the body.

189. (New) The sensor of claim 174, wherein the body is substantially cylindrical.

190. (New) The sensor of claim 189, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

191. (New) The sensor of claim 174, wherein the sensor further comprises an electronics body, and wherein the sensor body is tethered to the electronics body.

192. (New) The sensor body of claim 191, wherein the electronics body is substantially cylindrical.

193. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion of the body such that when a foreign body capsule forms around the sensor, a contractile force is exerted by the foreign body capsule toward the sensing region, and wherein the body comprises a first major surface on which said sensing region is located and a second

major surface, wherein the first major surface has edges between which a width of the first major surface can be measured, and wherein the sensing region is spaced away from the edges by a distance that is at least about 10% of the width of the first major surface.

194. (New) The sensor body of claim 193, wherein the electronics body is substantially cylindrical.

195. (New) The sensor of 193, wherein the sensing region is spaced away from the edges by a distance that is at least about 15% of the width of the first major surface.

196. (New) The sensor of claim 193, wherein the sensing region is spaced away from the edges by a distance that is at least about 20% of the width of the first major surface.

197. (New) The sensor of claim 193, wherein the sensing region is spaced away from the edges by a distance that is at least about 25% of the width of the first major surface.

198. (New) The sensor of claim 193, wherein the sensing region is spaced away from the edges by a distance that is at least about 30% of the width of the first major surface.

199. (New) The sensor of claim 193, wherein the spacing of the sensing region from the edges is true for at least two width measurements, which measurements are taken generally transverse to each other.

200. (New) The sensor of claim 193, wherein the sensor is a subcutaneous sensor.

201. (New) The sensor of claim 193, wherein the sensor is configured for implantation in a soft tissue of a body.

202. (New) The sensor of claim 193, wherein the sensor is a glucose sensor.

203. (New) The sensor of claim 193, further comprising a mechanical anchoring mechanism formed on the body.

204. (New) The sensor of claim 203, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

205. (New) The sensor of claim 193, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

206. (New) The sensor of claim 193, wherein said first major surface, when viewed from a direction perpendicular to a center of said first major surface, has a substantially rectangular profile with rounded corners.

207. (New) The sensor of claim 193, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

208. (New) The sensor of claim 193, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

209. (New) The sensor of claim 208, wherein the body comprises a plastic.

210. (New) The sensor of claim 209, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

211. (New) The sensor of claim 210, wherein the thermoset plastic is an epoxy.

212. (New) The sensor of claim 193, wherein the sensing region is situated approximately at an apex of a surface of the body.

213. (New) The sensor of claim 193, wherein the body is substantially cylindrical.

214. (New) The sensor of claim 213, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

215. (New) The sensor of claim 193, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

216. (New) The sensor of claim 215, further comprising an anchoring material on the sensing body.

217. (New) The sensor body of claim 215, wherein the electronics body is substantially cylindrical.

218. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion of the body such that when a foreign body capsule forms around the sensor, a contractile

force is exerted by the foreign body capsule toward the sensing region, wherein the sensor comprises a major surface and wherein said curved portion is located on at least a portion of the major surface, and wherein the body comprises a first major surface on which said sensing region is located and a second major surface, wherein the first major surface is at least slightly convex.

219. (New) The sensor of claim 218, wherein a reference plane may be defined that touches the first major surface at a point spaced in from edges of the first major surface, and is generally parallel to the first major surface, and is spaced away from opposite edges of the first major surface due to convexity of the first major surface, and wherein a location of an edge is the point at which a congruent line or a normal line is angled 45 degrees with respect to the reference plane.

220. (New) The sensor of claim 218, wherein the reference plane is spaced from the edges a distance that is at least about 3% from the edges, and not more than 50% of the width.

221. (New) The sensor of claim 218, wherein the reference plane is spaced from the edges a distance that is at least about 3% from the edges, and not more than 25% of the width.

222. (New) The sensor of claim 218, wherein the reference plane is spaced from the edges a distance that is at least about 3% from the edges, and not more than 15% of the width.

223. (New) The sensor of claim 218, wherein the sensor is a subcutaneous sensor.

224. (New) The sensor of claim 218, wherein the sensor is configured for implantation in a soft tissue of a body.

225. (New) The sensor of claim 218, wherein the sensor is a glucose sensor.

226. (New) The sensor of claim 218, further comprising a mechanical anchoring mechanism formed on the body.

227. (New) The sensor of claim 226, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

228. (New) The sensor of claim 218, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

229. (New) The sensor of claim 218, wherein said first major surface, when viewed from a direction perpendicular to a center of said first major surface, has a substantially rectangular profile with rounded corners.

230. (New) The sensor of claim 218, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

231. (New) The sensor of claim 218, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

232. (New) The sensor of claim 218, wherein the body comprises a plastic.

233. (New) The sensor of claim 232, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

234. (New) The sensor of claim 233, wherein the thermoset plastic is an epoxy.

235. (New) The sensor of claim 218, wherein the sensing region is situated approximately at an apex of a surface of the body.

236. (New) The sensor of claim 218, wherein the body is substantially cylindrical.

237. (New) The sensor of claim 236, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

238. (New) The sensor of claim 218, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

239. (New) The sensor of claim 238, further comprising an anchoring material on the sensing body.

240. (New) The sensor body of claim 238, wherein the electronics body is substantially cylindrical.

241. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion

of the body such that when a foreign body capsule forms around the sensor, a contractile force is exerted by the foreign body capsule toward the sensing region, and wherein the body defines a surface area, and wherein between 10 % and 100% of the surface area is convexly curved.

242. (New) The sensor of claim 241, wherein the sensor is a subcutaneous sensor.

243. (New) The sensor of claim 241, wherein the sensor is configured for implantation in a soft tissue of a body.

244. (New) The sensor of claim 241, wherein the sensor is a glucose sensor.

245. (New) The sensor of claim 241, further comprising a mechanical anchoring mechanism formed on the body.

246. (New) The sensor of claim 245, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

247. (New) The sensor of claim 241, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

248. (New) The sensor of claim 241, wherein the body comprises a first surface and a second surface, and wherein said first surface, when viewed from a direction perpendicular to a center of said first surface, has a substantially rectangular profile with rounded corners.

249. (New) The sensor of claim 241, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

250. (New) The sensor of claim 241, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

251. (New) The sensor of claim 241, wherein the body comprises a plastic.

252. (New) The sensor of claim 251, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

253. (New) The sensor of claim 252 wherein the thermoset plastic is an epoxy.

254. (New) The sensor of claim 241, wherein the sensing region is situated approximately at an apex of a surface of the body.

255. (New) The sensor of claim 241, wherein the body is substantially cylindrical.

256. (New) The sensor of claim 255, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

257. (New) The sensor of claim 241, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

258. (New) The sensor of claim 257, further comprising an anchoring material on the sensing body.

259. (New) The sensor body of claim 257, wherein the electronics body is substantially cylindrical.

260. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion of the body such that when a foreign body capsule forms around the sensor, a contractile force is exerted by the foreign body capsule toward the sensing region, and wherein the body defines a surface area, and wherein a substantial portion of the surface area is convexly curved.

261. (New) The sensor of claim 260, wherein the sensor is a subcutaneous sensor.

262. (New) The sensor of claim 260, wherein the sensor is configured for implantation in a soft tissue of a body.

263. (New) The sensor of claim 260, wherein the sensor is a glucose sensor.

264. (New) The sensor of claim 260, further comprising a mechanical anchoring mechanism formed on the body.

265. (New) The sensor of claim 264, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

266. (New) The sensor of claim 260, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

267. (New) The sensor of claim 260, wherein the body comprises a first surface and a second surface, and wherein said first surface, when viewed from a direction perpendicular to a center of said first surface, has a substantially rectangular profile with rounded corners.

268. (New) The sensor of claim 260, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

269. (New) The sensor of claim 260, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

270. (New) The sensor of claim 260, wherein the body comprises a plastic.

271. (New) The sensor of claim 270, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

272. (New) The sensor of claim 271, wherein the thermoset plastic is an epoxy.

273. (New) The sensor of claim 260, wherein the sensing region is situated approximately at an apex of a surface of the body.

274. (New) The sensor of claim 260, wherein the body is substantially cylindrical.

275. (New) The sensor of claim 274, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

276. (New) The sensor of claim 260, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

277. (New) The sensor of claim 276, further comprising an anchoring material on the sensing body.

278. (New) The sensor body of claim 276, wherein the electronics body is substantially cylindrical.

279. An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a sensor body comprising a sensing region adapted for transport of an analyte thereto, and a porous biointerface material that covers at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a curved portion of the body such that when a foreign body capsule forms around the sensor, a contractile force is exerted by the foreign body capsule toward the sensing region, and wherein the body defines a surface area, and where at least about 90 % of the surface area is convexly curved.

280. (New) The sensor of claim 279, wherein the sensor is a subcutaneous sensor.

281. (New) The sensor of claim 279, wherein the sensor is configured for implantation in a soft tissue of a body.

282. (New) The sensor of claim 279, wherein the sensor is a glucose sensor.

283. (New) The sensor of claim 279, further comprising a mechanical anchoring mechanism formed on the body.

284. (New) The sensor of claim 283, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

285. (New) The sensor of claim 279, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

286. (New) The sensor of claim 279, wherein the body comprises a first surface and a second surface, and wherein said first surface, when viewed from a direction perpendicular to a center of said first surface, has a substantially rectangular profile with rounded corners.

287. (New) The sensor of claim 279, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

288. (New) The sensor of claim 279, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

289. (New) The sensor of claim 279, wherein the body comprises a plastic.

290. (New) The sensor of claim 289, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

291. (New) The sensor of claim 290, wherein the thermoset plastic is an epoxy.

292. (New) The sensor of claim 279, wherein the sensing region is situated approximately at an apex of a surface of the body.

293. (New) The sensor of claim 279, wherein the body is substantially cylindrical.

294. (New) The sensor of claim 293, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

295. (New) The sensor of claim 279, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

296. (New) The sensor of claim 295, further comprising an anchoring material on the sensing body.

297. (New) The sensor body of claim 295, wherein the electronics body is substantially cylindrical.

298. (New) An implantable sensor adapted to measure a concentration of an analyte in a bodily fluid, comprising:

a body having a first major surface and, opposite thereto, a second major surface, wherein the first major surface is generally planar, slightly convex, and has rounded edges, with an electrochemical sensing region located on the first major surface that is spaced away from the rounded edges and a porous biointerface material covering at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the first major surface is sufficiently convex that when a foreign body capsule forms around the sensor, contractile forces are exerted thereby generally uniformly towards the sensing region.

299. (New) The sensor of claim 298, wherein the sensor is a subcutaneous sensor.

300. (New) The sensor of claim 298, wherein the sensor is configured for implantation in a soft tissue of a body.

301. (New) The sensor of claim 298, wherein the sensor is a glucose sensor.

302. (New) The sensor of claim 298, further comprising a mechanical anchoring mechanism formed on the body.

303. (New) The sensor of claim 302, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

304. (New) The sensor of claim 298, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

305. (New) The sensor of claim 298, wherein said first major surface, when viewed from a direction perpendicular to a center of said first major surface, has a substantially rectangular profile with rounded corners.

306. (New) The sensor of claim 298, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

307. (New) The sensor of claim 298, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

308. (New) The sensor of claim 298, wherein the body comprises a plastic.

309. (New) The sensor of claim 308, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

310. (New) The sensor of claim 309, wherein the thermoset plastic is an epoxy.

311. (New) The sensor of claim 298, wherein the sensing region is situated approximately at an apex of a surface of the body.

312. (New) The sensor of claim 298, wherein the body is substantially cylindrical.

313. (New) The sensor of claim 312, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

314. (New) The sensor of claim 298, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

315. (New) The sensor of claim 314, further comprising an anchoring material on the sensing body.

316. (New) The sensor body of claim 314, wherein the electronics body is substantially cylindrical.

317. (New) An implantable sensor for use in measuring a concentration of an analyte in a bodily fluid, the sensor comprising:

a body, the body comprising a sensing region adapted for transport of analytes thereto, and a porous biointerface material covering at least a portion of the sensing region, wherein the porous biointerface material covering the portion of the sensing region supports tissue ingrowth, wherein the sensing region is located on a major surface of the body, wherein said major surface comprises a continuous curvature substantially across the entire surface of the body, and wherein a thermoset plastic material substantially encapsulates the body outside the sensing region.

318. (New) The sensor of claim 317, wherein the sensor is a subcutaneous sensor.

319. (New) The sensor of claim 317, wherein the sensor is configured for implantation in a soft tissue of a body.

320. (New) The sensor of claim 317, wherein the sensor is a glucose sensor.

321. (New) The sensor of claim 317, further comprising a mechanical anchoring mechanism formed on the body.

322. (New) The sensor of claim 321, wherein the mechanical anchoring mechanism is selected from the group consisting of prongs, spines, barbs, wings, hooks, a helical surface topography, and a gradually changing diameter.

323. (New) The sensor of claim 317, wherein the biointerface material comprises interconnected cavities dimensioned and arranged to create contractile forces that counteract a generally uniform downward fibrous tissue contracture caused by the foreign body capsule *in vivo* and thereby interfere with formation of occlusive cells.

324. (New) The sensor of claim 317, wherein said major surface, when viewed from a direction perpendicular to a center of said major surface, has a substantially rectangular profile with rounded corners.

325. (New) The sensor of claim 317, further comprising an anchoring material connected to the body and selected from the group consisting of polyester, polypropylene cloth, polytetrafluoroethylene felts, expanded polytetrafluoroethylene, and porous silicone.

326. (New) The sensor of claim 317, wherein the body comprises at least one of metal, ceramic, plastic, and glass.

327. (New) The sensor of claim 317, wherein the body comprises a plastic.

328. (New) The sensor of claim 327, wherein the plastic is selected from the group consisting of thermoplastic and thermoset plastic.

329. (New) The sensor of claim 328, wherein the thermoset plastic is an epoxy.

330. (New) The sensor of claim 317, wherein the sensing region is situated approximately at an apex of a surface of the body.

331. (New) The sensor of claim 317, wherein the body is substantially cylindrical.

332. (New) The sensor of claim 331, wherein a radius of curvature of the body is from about 0.5 mm to about 10 cm.

333. (New) The sensor of claim 317, wherein the body comprises a sensing body and an electronics body, and wherein the sensing body is tethered to the electronics body.

334. (New) The sensor of claim 333, further comprising an anchoring material on the sensing body.

335. (New) The sensor body of claim 333, wherein the electronics body is substantially cylindrical.